IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Previously Presented): A lithium battery separator having a shutdown function comprising:

a porous carrier comprising a porous inorganic, nonelectroconductive coating layer that is bonded to a shutdown layer comprising meltable shutdown particles.

Claim 2 (Previously Presented): The separator according to claim 1, wherein said porous carrier is less than 50 μm in thickness and is bendable down to a radius of 0.5 mm to 50 mm without damage.

Claim 3 (Previously Presented): The separator according to claim 1, wherein said porous carrier comprises woven or non-woven polymeric or glass fibers.

Claim 4 (Previously Presented): The separator according to claim 3, wherein said porous carrier is a polymeric nonwoven fiber.

Claim 5 (Previously Presented): The separator according to claim 3, wherein said porous carrier comprises polymeric fibers that are polyacrylonitrile, polyester, polyolefin, or mixtures thereof.

Claim 6 (Previously Presented): The separator according to claim 1, wherein said porous carrier is less than 30 μm in thickness.

Claim 7 (Previously Presented): The separator according to claim 1, wherein said porous inorganic coating layer, present on said porous carrier, comprises oxide particles of the elements Al, Si and/or Zr from 0.5 to 10 μm in size on average.

Claim 8 (Previously Presented): The separator according to claim 1, wherein said shutdown particles have an average size (D_w) which is greater than the average pore size (d_s) of the pores of said porous inorganic, nonelectroconductive coating layer.

Claim 9 (Previously Presented): The separator according to claim 8, wherein the layer of shutdown particles has a thickness (z_w) which is approximately in the range from said average size of said shutdown particles (D_w) up to 10 times said particle size D_w.

Claim 10 (Previously Presented): The separator according to claim 1, wherein said shutdown particles contain at least one polymer, polymer blend, natural wax or artificial wax.

Claims 11-23 (Canceled)

Claim 24 (Previously Presented): A process of preparing a battery comprising, inserting the separator of claim 1 into a battery cell.

Claim 25 (Previously Presented): A battery comprising:

the separator of claim 1, and

one or more additional components.

Claim 26 (Previously Presented): The battery of claim 25 that is a lithium battery or a lithium high power or high energy battery.

Claim 27 (Previously Presented): The battery of claim 25, wherein the meltable shutdown particles melt at a temperature ranging from 120°C to 150°C and close the pores in the separator, thus suppressing the ion flux in the battery.

Claim 28 (Previously Presented): The separator of claim 1, wherein the porous inorganic, nonelectroconductive coating layer is ceramic.

Claim 29 (Previously Presented): The separator of claim 1, wherein the meltable shutdown particles contain at least one natural or artificial wax.

Claim 30 (Previously Presented): The separator of claim 1, wherein the meltable shutdown particles contain at least one polyolefin.

Claim 31 (Previously Presented): The separator of claim 1, wherein the meltable shutdown particles having an average particle size (D_w) that is within the range range of d_s to less than 5 d_s.

Claim 32 (Previously Presented): The separator of claim 1, wherein the meltable shutdown particles having an average particle size (D_w) ranging from d_s to less than 5 d_s, wherein d_s is the average pore size of the inorganic, nonelectroconductive coating layer.

Claim 33 (Previously Presented): The separator of claim 1, wherein the meltable shutdown particles form a layer having a thickness ranging from 1 to 2 D_w, wherein D_w is the average particle size of the shutdown particles.

Claim 34 (Withdrawn): A separator for a lithium battery that is less than 50 μm thick, has a porosity ranging from 30% to 80%, has a breaking strength of not less than 1N/cm, and is bendable down to a radius of 100 mm without damage, said separator comprising:

a carrier that is less than 30 μm thick comprising polymeric fibers which have a softening temperature of more than 100°C,

a porous inorganic, nonelectroconductive coating layer on said carrier comprising at least one oxide of aluminum, silicon, and/or zirconium, and

a shutdown layer on said nonelectroconductive coating layer containing particles of polypropylene wax or polyethylene wax that melt at a specific temperature and close the pores in the porous inorganic nonelectroconductive coating layer.

Claim 35 (New): The separator according to claim 1, wherein the coating layer consists of a ceramic.

Claim 36 (New): The separator according to claim 1, wherein the coating layer is present in and on the porous carrier and the shutdown layer is directly adjacent to the coating layer.

Claim 37 (New): The separator according to claim 36, wherein the meltable shutdown particles are particles of at least one polymer.

Claim 38 (New): The separator according of claim 37, wherein the carrier has a thickness of less than 30 μm and a porosity of more than 50%.

Claim 39 (New): The separator of claim 38, further comprising at least one electrolyte selected from the group consisting of $LiClO_4$, $LiBF_4$, $LiAsF_6$ and $LiPF_6$.

Claim 40 (New): The separator of claim 39, having a sheet resistance of greater than 500 Ωcm^2.

Claim 41 (New): A lithium battery separator having a shutdown function, comprising:

(i) an ion-conducting porous carrier, (ii) a nonelectroconductive coating layer present on and in the porous carrier and different from the porous carrier, and (iii) a shutdown layer different from the nonelectroconductive coating layer and comprising meltable shutdown particles;

wherein the porous carrier has a thickness of 30 μm or less,

wherein the nonelectroconductive coating layer separates the porous carrier from the shutdown layer,

wherein the particles of the shutdown layer melt at a temperature T to form a flowable material that flows into and/or blocks the pores of the porous carrier to thereby block ion conduction through the porous carrier, and

wherein the separator has a porosity of 30-80% based on mercury porosimetry.